

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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Attachment No. 2

INITIAL STATEMENT OF REASONS**CALIFORNIA CODE OF REGULATIONS**

**TITLE 8: Section 1801 of the Construction Safety Orders
and Section 8416 of the Tunnel Safety Orders.**

Update of ANSI Z136.1 Warning Signs and Labeling Standards**SUMMARY**

This rulemaking proposal would update two existing provisions of the Title 8 Construction Safety Orders and Tunnel Safety Orders that pertain to laser safety. Those provisions, Sections 1801 and 8416, incorporate by reference the American National Standard Institute (ANSI) Z136.1-1993 standards for laser warning signs and labels. ANSI Z136.1-1993, Section 4.7, has been superseded by ANSI Z136.1-2000, Section 4.7, thereby rendering the Sections 1801 and 8416 ANSI references out-of-date. In addition, a cross-reference in Section 1801 to another safety order also needs to be updated, as the cross-referenced safety order has been repealed.

Sections 1841 and 8416 are needed in order to protect employees from laser hazards. Updates of Sections 1801 and 8416 are needed so that the substantive requirements of those safety orders—the safety order cross-reference in Section 1801 and the ANSI reference—are current and readily ascertainable by regulators and by the regulated public.

ANSI Z136.1 provides standards for the safe use of laser systems that operate at wavelengths between 180 nanometers (nm) and 1 millimeter. This wavelength range applies to lasers commonly used in construction and tunneling operations. The unprotected human eye is extremely sensitive to laser radiation and can be permanently damaged by direct or reflected beams. The site of ocular damage for any given laser depends upon its output wavelength. Laser light in the visible and near infrared spectrum 400-1400 nm can cause damage to the retina, while wavelengths outside this region (i.e., ultraviolet and far infrared spectrum) are absorbed by the anterior segment of the eye causing damage to the cornea and/or to the lens.

Data provided by the Division of Occupational Safety and Health (Division), Integrated Management Information System, documented five citations involving violations of Sections 1801(d) and 8416(b). In addition, the Division identified two injuries between January 1993 and July 2006 related to incidental intrusion of laser light. According to injury data compiled by Rockwell Laser Industries, Inc., a provider of laser safety products and services to industry, there were 27 incidents involving incidental intrusion of laser light in California between 1993 and 2001.

SPECIFIC PURPOSE AND FACTUAL BASIS OF PROPOSED ACTION

Section 1801. Nonionizing Radiation

This section contains various nonionizing radiation standards for the construction industry and includes but is not limited to: 1) qualifications for employees installing, adjusting or operating laser equipment, 2) using personal protective devices, 3) posting of signs and labels, and 4) guiding the internal alignment of lasers.

Changes are proposed to update the ANSI Z136.1 reference from the 1993 edition to the 2000 edition and incorporate by reference Chapter 4, Section 4.7 that specifically addresses laser warning signs and labels.

The first proposed change made in Section 1801 is in subsection (c), where the cross reference to Section 1516(e) is replaced by a cross reference to Section 3382(e). Section 1516(e) was repealed in 2000, and Section 3382(e) concerns the same subject matter (eye and face protection).

The second proposed change is in subsection (d) where references to ANSI Z136.1-1993, Sections 4.7-4.9, are replaced by reference to ANSI Z136.1-2000, Section 4.7. ANSI Z136.1-1993 is out of print or otherwise difficult to obtain, and ANSI Z136.1-1993 refers to symbol designs that also are out of print. If Section 1801 continued to incorporate such outdated material, those who are subject to that safety order would have significant difficulty in ascertaining the safety order's requirements.

ANSI Z136.1-2000, on the other hand, is readily available and has references to current symbol designs, such as the "ANSI Z535 Design" and the "IEC 60825-1 Design." There are other differences between the relevant portions of ANSI Z136.1-2000 and ANSI Z136.1-1993:

- ANSI Z136.1-2000, Section 4.7, unlike ANSI Z136.1-1993, Section 4.7, designates the word "Notice" as a signal word and requires the use of the word "Notice" on signs posted outside a temporary laser controlled area.
- ANSI Z136.1-2000, Section 4.7, deletes a requirement found in ANSI Z136.1-1993, Section 4.7, for special signage to be used in connection with a Class 2a laser or laser system.
- ANSI Z136.1-2000, Section 4.7, unlike ANSI Z136.1-1993, Section 4.7, includes a reference to "Laser Protective Eyewear Required" as being an example of the wording that may appear on warning signs at position 1, above the tail of the sunburst.

Section 1801(d) incorporates ANSI Z136.1-1993, Sections 4.8 and 4.9, which do not govern the posting of laser warning signs and labels. ANSI Z136.1-2000 contains no Sections 4.8 and 4.9, and the provisions of ANSI Z136.1-2000 that cover at least some of the same subject matter as ANSI Z136.1-1993, Sections 4.8 and 4.9, do not appear to govern the posting of laser warning signs and labels. Therefore, the proposed revision of Section 1801(d) omits the references to

ANSI Z136.1-1993, Sections 4.8 and 4.9, and does not include any references to equivalent provisions of ANSI Z136.1-2000.

By referencing ANSI Z136.1-2000, Section 1801(d) will utilize the current consensus standard, and Section 1801(d) will be more intelligible and user friendly.

Section 8416. Lasers.

This section contains laser requirements for tunneling operations and addresses locating and targeting of lasers, laser warning signs and labels under section 8416(b) and also requires the use of lasers in accordance with the requirements of Construction Safety Orders, Section 1801 that are stated in section 8416(c).

An amendment is proposed to delete existing language pertaining to the posting of laser warning signs and labels in accordance with the ANSI Z136.1-1993 standard and replace it with a reference to Section 1801 of the Construction Safety Orders which is proposed to incorporate by reference applicable laser warning sign and label requirements contained in the ANSI Z136.1-2000 standard. The proposed amendment will eliminate duplication and have no other effect other than to reduce and simplify the existing regulatory text language, making the amended standard easier to read without having to repeat provisions found in Section 1801. In addition, the words “installed and adjusted” are to be added to Section 8416(c) in order to reflect the wording of Section 1801(a), thereby ensuring that the scope of Section 8416 coincides with the scope of Section 1801.

DOCUMENTS RELIED UPON

1. American National Standard (ANSI), Z136.1-1993, American National Standard for the Safe Use of Lasers
2. ANSI, Z136.1-2000, American National Standard for the Safe Use of Lasers.
3. E-Mail transmission dated September 19, 2006 from the Division of Occupational Safety and Health to the Occupational Safety and Health Standards Board regarding Laser Regulation Citations with attached U.S. Department of Labor, Occupational Safety and Health Administration, Integrated Management Information Services (IMIS) reports; Cal OSHA Inspection Records, 01//01/93 through 08/31/06.
4. Rockwell Laser Industries, Inc., Accident Search Database Search Results, 1993-2001, Laser Accidents for California, <http://www.rli.com/resources/process.asp>

These documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Occupational Safety and Health Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

REASONABLE ALTERNATIVES THAT WOULD LESSEN ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES

No reasonable alternatives were identified by the Occupational Safety and Health Standards Board (Board) and no reasonable alternatives identified by the Board or otherwise brought to its attention would lessen the impact on small businesses.

SPECIFIC TECHNOLOGY OR EQUIPMENT

This proposal will not mandate the use of specific technologies or equipment.

COST ESTIMATES OF PROPOSED ACTION

Costs or Savings to State Agencies

No costs or savings to state agencies will result as a consequence of the proposed action.

Impact on Housing Costs

The Board has made an initial determination that this proposal will not significantly affect housing costs.

Impact on Businesses

The Board has made a determination that this proposal will not result in a significant, statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states.

Cost Impact on Private Persons or Businesses

The Board is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

Costs or Savings in Federal Funding to the State

The proposal will not result in costs or savings in federal funding to the state.

Costs or Savings to Local Agencies or School Districts Required to be Reimbursed

No costs to local agencies or school districts are required to be reimbursed. See explanation under "Determination of Mandate."

DETERMINATION OF MANDATE

The Board has determined that the proposed standards do not impose a local mandate. Therefore, reimbursement by the state is not required pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code because the proposed amendment will not require local agencies or school districts to incur additional costs in complying with the proposal. Furthermore, these standards do not constitute a “new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.”

The California Supreme Court has established that a “program” within the meaning of Section 6 of Article XIII B of the California Constitution is one which carries out the governmental function of providing services to the public, or which, to implement a state policy, imposes unique requirements on local governments and does not apply generally to all residents and entities in the state. (County of Los Angeles v. State of California (1987) 43 Cal.3d 46.)

These proposed standards do not require local agencies to carry out the governmental function of providing services to the public. Rather, the standards require local agencies to take certain steps to ensure the safety and health of their own employees only. Moreover, these proposed standards do not in any way require local agencies to administer the California Occupational Safety and Health program. (See City of Anaheim v. State of California (1987) 189 Cal.App.3d 1478.)

These proposed standards do not impose unique requirements on local governments. All employers - state, local and private - will be required to comply with the prescribed standards.

EFFECT ON SMALL BUSINESSES

The Board has determined that the proposed amendment may affect small businesses. However, no economic impact is anticipated.

ASSESSMENT

The adoption of the proposed amendment to these standards will neither create nor eliminate jobs in the State of California nor result in the elimination of existing businesses or create or expand businesses in the State of California.

ALTERNATIVES THAT WOULD AFFECT PRIVATE PERSONS

No reasonable alternatives have been identified by the Board or have otherwise been identified and brought to its attention that would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.